

REMARKS

Overview

In the Office Action under reply, claims 1-15, 19, and 21-35 were examined, claims 16-17 and 20 having been canceled previously. Applicants acknowledge with appreciation the Examiner's withdrawal of the rejection under 35 U.S.C. § 103(a) (Action at 2). Applicants note that claim 18 is not mentioned in the Action, and respectfully request that the Examiner indicate the status of the claim in the next communication.

Claims 1-15, 19, and 21-35 stand rejected under 35 U.S.C. §103(a) as unpatentable over Choi, US 2003/0091928 ("Choi") in view of Houlihan et al, US 2004/0265733 ("Houlihan").

The rejection is overcome in part by the amendments made herein, and is otherwise traversed for at least the reasons set forth below.

Claim amendments

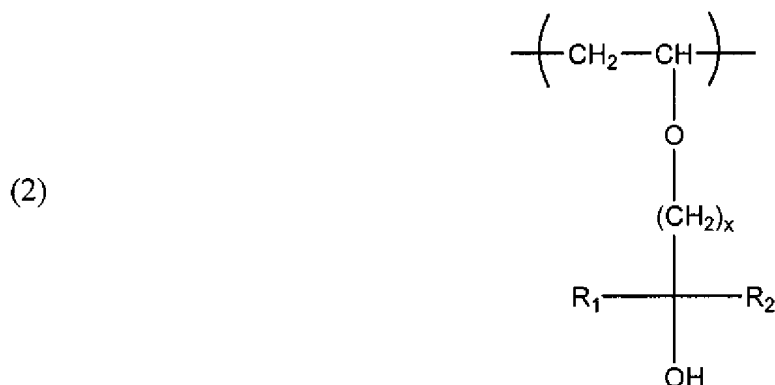
With the amendments made herein, claim 1 has been amended to specify that R^H has the formula $-L^3-CR^{11}R^{12}-OH$, wherein the L^3 , R^{11} , and R^{12} are as defined in the claim. Support for this amendment can be found, for example, in paragraphs [00049]-[00052] of the original specification as well as claim 22. No new matter is therefore added. In light of the amendments to claim 1, claim 22 has been canceled and claim 24 has been amended.

Rejection under 35 U.S.C. §103(a)

Claims 1-15, 19, and 21-35 stand rejected under 35 U.S.C. §103(a) as unpatentable over Choi in view of Houlihan. This rejection is overcome by the present amendment.

The present claim 1 is directed, in part, to forming a coating on a substrate with a composition comprising a polymer that is prepared by polymerization of a monomer mixture, the mixture comprising an olefinic monomer selected from (i) an olefinic monomer containing a pendant fluorinated hydroxyalkyl group R^H , (ii) an olefinic monomer containing a pendant fluorinated alkylsulfonamide group R^S , and (iii) combinations thereof, wherein R^H has the formula $-L^3-CR^{11}R^{12}-OH$, in which L^3 is selected from C_1-C_{12} alkylene, substituted C_1-C_{12} alkylene, C_3-C_{15} alicyclic, C_3-C_{15} fluoroalicyclic, and combinations thereof, and R^{11} and R^{12} are as defined in the claim.

Choi is directed to photosensitive polymers having the structure of formula 2:



wherein, in formula (2) R_1 and R_2 are independently $\text{C}_1\text{--C}_{20}$ alkyl, $\text{C}_1\text{--C}_{10}$ fluorinated alkyl, or $\text{C}_1\text{--C}_{10}$ perfluorinated alkyl. The polymers of Choi may contain other co-monomers, such as those represented in formulae 3-9 (see Choi, pp. 2-3), but only formula (2) includes the specific possibility of having a pendant fluorinated hydroxyalkyl group (i.e., R_1 and/or R_2 are fluorinated alkyl). The "pendant" group in Choi's formula (2) has the formula $\text{---O---}(\text{CH}_2)_x\text{---CR}_1\text{R}_2\text{---OH}$; the compounds of Choi necessarily contain a heteroalkyl pendant group. However, in the instant claims, L^3 is selected from alkylene, substituted alkylene, alicyclic, fluoroalicyclic, and combinations thereof. The compounds of Choi therefore do not have a structure that is encompassed by applicants' R^{H} .

Furthermore, Choi does not suggest modifying the compounds disclosed therein in order to arrive at a structure encompassed by applicants' R^{H} . In fact, Choi repeatedly mentions that the vinyl ether structure of formula (2) is a key aspect of the invention. For example, Choi states that "[t]he vinyl ether backbone is more flexible than a conventional alicyclic hydrocarbon backbone" (Choi, paragraph [0018]). The abstract of the invention describes "a photosensitive polymer having a hydroxy alkyl vinyl ether monomer" (Choi, Abstract). Choi does not suggest modifying the vinyl ether compounds in any way that would lead to the preparation of compounds of the instant claims. Furthermore, Choi's repeated advocacy for vinyl ether compounds would discourage the skilled artisan from modifying the compounds of Choi.

Houlihan does not provide the teachings missing from Choi. Houlihan is directed to compositions suitable for photoresists, but does not describe any structures that are within the scope of the instant claims. Houlihan does not suggest that compounds containing fluorinated hydroxyalkyl groups should be prepared, and furthermore does not suggest methods for modifying the compounds of Choi so as to arrive at the compounds of the instant claims.

The MPEP provides the standard for a rejection based on obviousness: "[w]ith regard to rejections under 35 U.S.C. 103, the examiner must provide evidence which as a whole shows that the legal determination sought to be proved (i.e., the reference teachings establish a *prima facie* case of obviousness) is more probable than not." (MPEP § 2142.) The Action fails to meet this standard with respect to the amended claims. As shown by the arguments set forth above, the bulk of the evidence suggests that neither Choi nor Houlihan describe compounds that are within the scope of the claims. Neither Choi nor Houlihan describe methods for modifying the compounds disclosed therein so as to arrive at the compounds of the instant claims. And furthermore, neither Choi nor Houlihan suggest that compounds other than vinyl ethers that contain fluorinated hydroxyalkyl groups might be suitable or desirable in processes for patterning a substrate. Therefore, the evidence does not support the conclusion that a *prima facie* case of obviousness is more probable than not. Accordingly, applicants respectfully request withdrawal of the rejection.

CONCLUSION

Applicants submit that the claims of the application are in condition for allowance. Applicants respectfully request withdrawal of the rejections, and prompt issuance of a notice of allowance. If the Examiner has any questions concerning this communication, or would like to discuss the application, the art, or other pertinent matters, a telephone call to the undersigned would be welcomed.

Respectfully submitted,

By:



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